



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 557 521 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
27.07.2005 Bulletin 2005/30

(51) Int Cl.7: **E06B 3/968**

(21) Application number: **05386001.1**

(22) Date of filing: **10.01.2005**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LT LU MC NL PL PT RO SE SI SK TR**
Designated Extension States:
AL BA HR LV MK YU

(71) Applicant: **Delaveridis I. Haralampos**
59100 Imathia, P.O. Box 50 (GR)

(72) Inventor: **Delaveridis I. Haralampos**
59100 Imathia, P.O. Box 50 (GR)

(30) Priority: **20.01.2004 GR 2004100019**

(54) **Angle for flattening and alignment of aluminium profiles**

(57) Angle for restraint and simultaneous alignment of the extensions (wings) of the profile which is characterized by three dimensional moulded lamina with

wedged shapes (1) so at the insertion of it in the profiles it enters freely and fits tightly without any gaps to ensure complete, precise restraint, alignment of profiles.

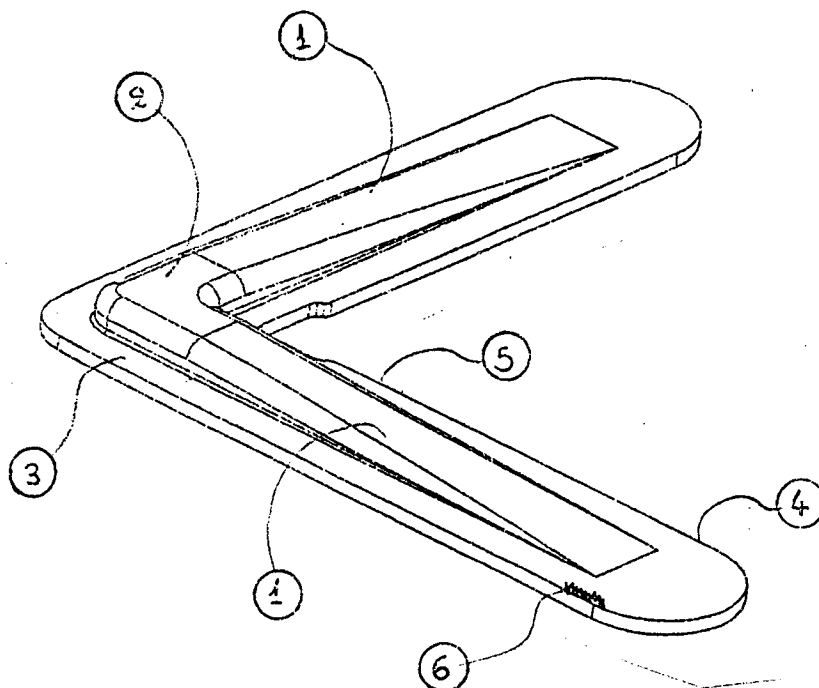


Fig. 3

EP 1 557 521 A2

Description

[0001] The invention concerns the angle made from lamina used for restraining and alignment of the extensions outside from the chamber of profiles at the points of connection between them. Until now, the flattening angles have been made from lamina (figure I) of which the thickness and width determine the fit on assembly, with the profiles (figure II).

[0002] If the thickness and width of the angle could have a closer fit with the profile (smaller gap) then we would achieve a better assembly. This is not technically possible, because problems are occurring, like:

1st Changes in dimensions at the sockets of the profiles because of long usage of the extrusion matrix.

2nd The demand for bigger margins for as much as easier assembly.

3rd Surfaces defects because of the lamina's cut. (Filings-the cut edge is not smooth).

4th The thickness of the paint that enters many times in the sockets of the profile.

5th The need of special thickness laminas each time we want to manufacture a different angle.

[0003] For these reasons, the current design of the flattening angle has only limited success in the functions for which it was designed. To summarize the current disadvantages, they are due to small changes in the thickness dimension, and also from demands for special thickness for different flattening angles.

[0004] All these disadvantages can be converted to advantages with the introduction of a new technical design for similar flattening angles that forms this new invention. The invention upgrades technically the simple static shape, solving all current usage problems and removing problems in manufacture.

[0005] In figure (I) we illustrate the way that the alignment angle has been manufactured until now and in figure (II) the way that applies; this is to understand the technical design until now. The new invention in figure (III) shows one clear appearance of the flattening angle where the innovation of the new manufacture's drawing is clear and in figure (IV) the application of the new profile.

[0006] In figure (III) we distinguish an angle made from lamina mould in three dimensions where the basic elements are the wedge-shaped moulds (1) ending their connection to a right-angled mould (2) all parallel to and mounted on the base lamina (3).

[0007] The width of the lamina from the point (4) to the point (5) has a wedge shaped too with the inside or the outside angle 90 degrees. The cut of the lamina has been made in such away that the cutting defects (filings)

(6) will be on the moulded surface (upper) side. The wedged shapes ensure that assembly will be easier, and only at the final stage will the angle surface (2) succeed in flattening the profiles where we have the desirable thickness. The defects of the cut (6) do not affect the flattening angle because the height of the mould covers them (2) and they have no contact with the profiles where the problems will be created.

[0008] The thickness of the manufacturing lamina can be the same for a lot of different thickness angles because the thickness is determined by the formation (1) (2) and because of this there is no need for a special thickness lamina in order to manufacture different sizes angles. The thickness of the manufacturing lamina can be thin due to mechanical strengths, which derives from the wedge. So the component has less weight, potentially greatly reducing the cost of the manufacture and making it possible to use more expensive materials e. g. Lamina from stainless steel.

[0009] The slim thickness of the lamina in connection with the shape of (Ω) Greek omega at the point (2) works as a spring too, so it is self-regulated in all small difference of sizes. Detailed possibilities are not examined in this description because it is indicative like the drawing.

The flattening angle can be manufactured in the desirable shape, figure, size and with various different materials according to each specific need, without any possible change in the basics of the invention.

Claims

1. Angle for restraint and simultaneous alignment of the extensions (wings) of the profile (figure IV), which is **characterized by** a three-dimensional moulded lamina (figure III) with wedged shapes (1) at the base (3). The width of the angle has a wedged shape from the point (4) up to the point (5). The cut of the angle has been made from the side of the moulding so the cut's failings are at the same (upper) side.
2. According to claim (1) the flattening angle characterizes that for bigger width angles can be used more than one three-dimensional wedged shapes.
3. According to claim (1) the flattening angle characterizes that it can be manufactured from plastic, aluminium retaining the three-dimensional wedged shapes (1) (2) (figure III) and that the surface (3) may be straight without the cavity which is created when it is manufactured from lamina.

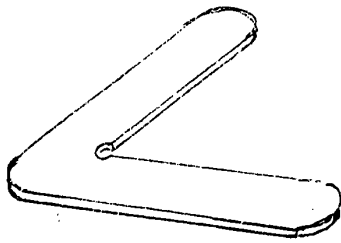


Fig. 1

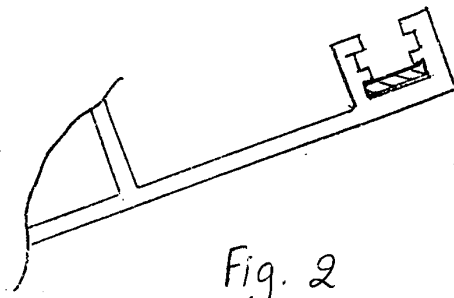


Fig. 2

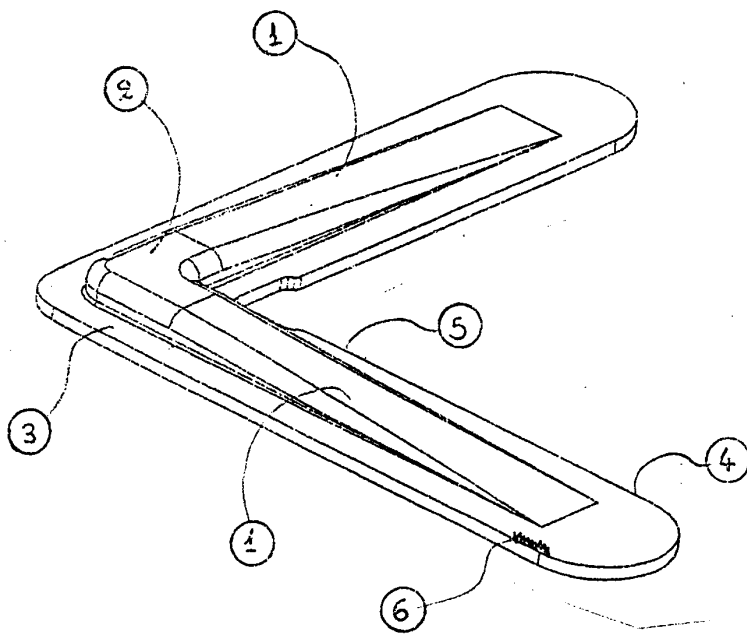


Fig. 3

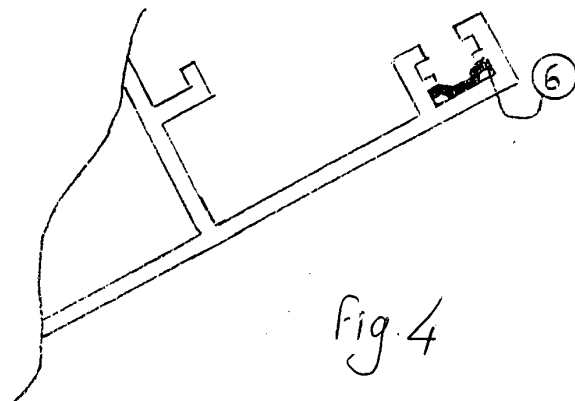


Fig. 4